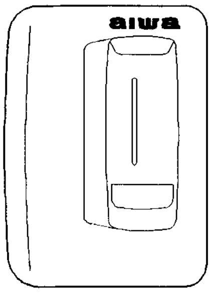
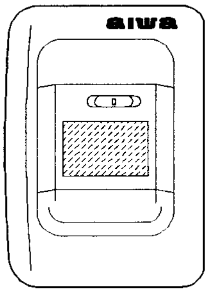
aiwa

aiwa
SERVICE

HS-JS345
HS-JS245
HS-JS360


HS-JS245/360


HS-JS345

STEREO RADIO
CASSETTE RECORDER

• BASIC TAPE MECHANISM: 3ZM-1 R1 • TYPE: D(JS360) Y,YZ(JS245,JS345)

製品コード：84HJ7-0111(B)

SERVICE MANUAL

MC-Service

SPECIFICATIONS

Frequency range	FM: 87.5 – 108 MHz AM: 530 – 1605 kHz
Output	15 mW + 15 mW (EIAJ 32 Ω) 20 mW + 20 mW (EIAJ 16 Ω)
Power supply	DC 3V using two R6 (size AA) batteries AC house current using an optional AC adaptor AC-620 or AC-300
Speaker	Diameter 36 mm, 8 Ω
Battery life	EIAJ 10 mW output playback Using manganese (R6P) batteries 3.5 hours Using alkaline batteries (LR6) 15 hours EIAJ 1 mW output playback Using manganese (R6P) batteries 4.5 hours Using alkaline batteries (LR6) 19 hours EIAJ recording Using manganese (R6P) batteries 2.5 hours Using alkaline batteries (LR6) 12 hours
Dimensions	HS-JS345: 88.2 (W) × 119 (H) × 38.3 (D) mm HS-JS245: 88.2 (W) × 119 (H) × 37.8 (D) mm
Weight	HS-JS345: Approx. 180g (excluding batteries) HS-JS245: Approx. 166g (excluding batteries)

Design and specifications are subject to change without notice.

受信周波数	FM／TV（1～3チャンネル）：76～108MHz AM：530～1605kHz
実用最大出力	20mW＋20mW（EIAJ 16Ω）
電源	乾電池DC 3V（単3形乾電池2本） 家庭用電源 AC 100V 50／60Hz （別売りのACアダプターAC-620A使用）

電池持続時間（EIAJ 1mW出力時）

使用乾電池	再生時間	録音時間
単3形アルカリ乾電池（LR6）	約19時間	約12時間
単3形マンガン乾電池（R6P）	約4.5時間	約2.5時間

最大外形寸法	88.2（幅）×119（高さ）×37.8（厚さ）mm
重量	280g（乾電池含む）

仕様及び外観は、予告なく変更することがありますので、ご了承下さい。

■ ACCESSORIES／PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-HJ7-901-010	0E	IB,D<D>
1	84-HJ6-902-010		IB,EX-ESC<EXCEPT D>
1	84-HJ6-903-010		IB,EX-GFI<EXCEPT D>
2	87-041-073-010	2A	CM-S35A
3	87-048-278-010	2M	HP-24NA
4	87-047-147-010	0E	BAT,R6P NL IDN<D>

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

IC

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
	87-001-943-080	1F	IC, TA8155F
	87-020-234-080	1C	IC, TA7688F(S)
	87-017-370-080	1B	IC, MM1038AFF
	87-001-379-080	1C	IC, TA8122AF
	87-002-232-080		IC, NJM2073M〈345Y, 345YZ〉
	87-017-906-080	1B	IC, MM1206 AFFE
	87-017-923-080	1B	IC, TK11822

TRANSISTOR

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
	87-026-263-080	0E	C-TR, RN1410
	89-327-143-080	0E	C-TR, 2SC2714 (0)
	89-333-266-080	0E	C-TR, 2SC3326B
	89-111-624-080	0E	C-TR, 2SA1162Y
	89-502-114-080	1A	FET, 2SK211Y

DIODE

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
	87-001-166-080		C-DIODE, 1SS301〈345Y, 345YZ〉

MAIN C.B

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
BPF1	87-030-136-010		FLTR, BPMB8L 7.0〈EXCEPT D〉
BPF1	87-030-104-010	1A	FLTR, BPWB8L〈D〉
C1	87-010-178-080	0E	C-CAP, S 1000P-50 B
C2	87-010-178-080	0E	C-CAP, S 1000P-50 B
C3	87-016-462-080	0E	C-CAP, S 1-16 F
C4	87-016-462-080	0E	C-CAP, S 1-16 F
C5	87-010-322-080	0E	C-CAP, S 100P-50 CH
C6	87-010-322-080	0E	C-CAP, S 100P-50 CH
C7	87-010-184-080	0E	C-CAP, S 3300P-50 B
C8	87-010-184-080	0E	C-CAP, S 3300P-50 B
C9	87-010-197-080	0E	C-CAP, S 0.01-25 B
C10	87-010-197-080	0E	C-CAP, S 0.01-25 B
C11	87-010-499-040	0E	CAP, E 22-6.3 GAS
C12	87-010-499-040	0E	CAP, E 22-6.3 GAS
C13	87-010-220-080	0E	C-CAP, S 0.018-25 B
C14	87-010-220-080	0E	C-CAP, S 0.018-25 B
C15	87-010-188-080	0E	C-CAP, S 6800P-50 B
C16	87-010-188-080	0E	C-CAP, S 6800P-50 B
C17	87-016-462-080	0E	C-CAP, S 1-16 F
C18	87-016-462-080	0E	C-CAP, S 1-16 F
C19	87-016-462-080	0E	C-CAP, S 1-16 F
C20	87-016-462-080	0E	C-CAP, S 1-16 F
C21	87-016-462-080	0E	C-CAP, S 1-16 F
C22	87-016-462-080	0E	C-CAP, S 1-16 F
C23	87-016-170-080	1A	C-CAP, TN 1-16 F95Q
C24	87-016-170-080	1A	C-CAP, TN 1-16 F95Q
C25	87-010-196-080	0E	C-CAP, S 0.1-25 F
C26	87-010-196-080	0E	C-CAP, S 0.1-25 F
C29	87-016-462-080	0E	C-CAP, S 1-16 F
C30	87-016-462-080	0E	C-CAP, S 1-16 F
C31	87-016-462-080	0E	C-CAP, S 1-16 F
C32	87-016-462-080	0E	C-CAP, S 1-16 F
C35	87-010-174-080	0E	C-CAP, S 470P-50 SL
C36	87-010-174-080	0E	C-CAP, S 470P-50 SL
C37	87-010-178-080	0E	C-CAP, S 1000P-50 B
C38	87-010-178-080	0E	C-CAP, S 1000P-50 B
C39	87-012-141-080	0E	C-CAP, S 0.22-16 F
C40	87-012-141-080	0E	C-CAP, S 0.22-16 F
C41	87-010-588-040	0E	CAP, E 220-2
C42	87-010-588-010	0E	CAP, E 220-2
C101	87-010-501-010	0E	CAP, E 47-4 GAS
C102	87-010-176-080	0E	C-CAP, S 680P-50 SL
C103	87-010-197-080	0E	C-CAP, S 0.01-25 B
C104	87-010-197-080	0E	C-CAP, S 0.01-25 B
C105	87-010-180-080	0E	C-CAP, S 1500P-50 B
C106	87-010-197-080	0E	C-CAP, S 0.01-25 B
C107	87-010-184-080	0E	C-CAP, S 3300P-50 B
C108	87-010-197-080	0E	C-CAP, S 0.01-25 B
C109	87-010-497-040	0E	CAP, E 4.7-35 GAS
C110	87-010-587-040	0E	CAP, E 100-2
C111	87-010-499-010	0E	CAP, E 22-6.3 GAS
C114	87-010-587-040	0E	CAP, E 100-2
C115	87-010-501-040	0E	CAP, E GAS 47-4
C116	84-439-620-010	0E	CAP, E 470-4
C117	87-010-503-040	0E	CAP, E 220-4 GAS
C119	87-016-462-080	0E	C-CAP, S 1-16 F
C120	87-010-178-080	0E	C-CAP, S 1000P-50 B
C121	87-010-196-080	0E	C-CAP, S 0.1-25 F
C122	87-010-197-080	0E	C-CAP, S 0.01-25 B
C123	87-010-197-080	0E	C-CAP, S 0.01-25 B
C125	87-010-640-080	1B	C-CAP, TN 22-4
C130	87-010-805-080	0E	C-CAP, S 1-16F
C201	87-015-627-080	0E	C-CAP, 1000P-50 B
C202	87-010-196-080	0E	C-CAP, S 0.1-25 F
C203	87-010-197-080	0E	C-CAP, S 0.01-25 B
C204	87-010-197-080	0E	C-CAP, S 0.01-25 B
C205	87-010-567-080	0E	C-CAP, S 120P-50 UJ〈D〉
C205	87-010-339-080		C-CAP, S 33P-50 UJ〈EXCEPT D〉
C206	87-010-326-080	0E	C-CAP, S 3P-50 UJ
C207	87-010-197-080	0E	C-CAP, S 0.01-25 B
C208	87-010-571-080	0E	C-CAP, S 270P-50 UJ〈D〉
C208	87-010-338-080		C-CAP, S 27P-50 UJ〈EXCEPT D〉
C209	87-010-324-080	0E	C-CAP, S 1P-50UJ〈D〉
C209	87-010-326-080		C-CAP, S 3P-50 UJ〈EXCEPT D〉
C210	87-010-197-080	0E	C-CAP, S 0.01-25 B
C211	87-012-156-080	0E	C-CAP, S 220P-50 CH
C212	87-010-336-080	0E	C-CAP, S 18P-50 UJ
C213	87-010-574-080	0E	C-CAP, S 470P-50 UJ
C214	87-010-174-080	0E	C-CAP, S 470P-50 SL
C215	87-016-462-080	0E	C-CAP, S 1-16 F
C216	87-010-196-080	0E	C-CAP, S 0.1-25 F
C218	87-010-196-080	0E	C-CAP, S 0.1-25 F
C219	87-010-501-010	0E	CAP, E 47-4 GAS
C220	87-010-193-080	0E	C-CAP, S 0.033-25 F
C221	87-010-322-080	0E	C-CAP, S 100P-50 CH
C225	87-010-503-040	0E	CAP, E 220-4 GAS
C226	87-010-195-080	0E	C-CAP, S 0.068-25 F
C227	87-010-184-080	0E	C-CAP, S 3300P-50 B
C228	87-010-147-080	0E	C-CAP, S 3P-50 CH
C251	87-010-426-080	0E	C-CAP, S 0.012-25 B
C252	87-010-426-080	0E	C-CAP, S 0.012-25 B
C253	87-016-462-080	0E	C-CAP, S 1-16 F
C254	87-016-462-080	0E	C-CAP, S 1-16 F
CF1	87-008-444-010	1B	FLTR KIT, FM 5RANK
CF2	87-008-284-010	1B	FLTR, PFB 468J
CF3	87-008-444-010	1B	FLTR KIT, FM 5RANK
CF4	87-030-200-010	1A	VIB, CER CSB 456 F16 2M
D201	87-017-645-080	1C	C-VARICAP, KV1580
D202	87-017-925-080	1A	C-VARACTOR, KV1460
D203	87-017-925-080	1A	C-VARACTOR, KV1460
J1	87-099-369-010	0E	JACK, 3.5BK
J2	87-099-369-010	0E	JACK, 3.5BK
J3	87-009-022-010	1A	DC JACK LONG
L1	87-003-143-080	0E	COIL, 4.7UH
L2	87-003-143-080	0E	COIL, 4.7UH
L101	87-007-189-010	1A	COIL, OSC
L102	87-003-143-080	0E	COIL, 4.7UH
L103	87-003-089-010	0E	COIL, 47UH
L104	87-003-089-010	0E	COIL, 47UH
L201	80-HJ6-605-010	0E	COIL, ROADING
L202	82-HJ6-611-010	1B	BAR, ANT
L203	82-HJ6-603-010	0E	COIL, RF FM
L204	80-HJ6-615-010		COIL, OSC FM, D〈EXCEPT D〉
L204	84-HJ6-605-010	0E	COIL, OSC FM, DO〈D〉
L205	87-007-335-010	1A	COIL, OSC AM 100UH
L206	87-008-447-010	1A	IFT, AM
R122	87-022-037-080	0E	C-RES, M M/F0.68
SFR1	87-024-050-010	0E	SFR 1K
SW1	87-036-082-010	1B	SW, SLIDE 2-2-2
SW2	87-036-379-080	1A	C-SW, SL 1-1-2〈245Y, D, 245YZ〉
SW2	87-036-304-080		C-SW, SL1-1-2〈345Y, 345YZ〉
SW3	87-036-379-080	1A	C-SW, SL 1-1-2〈245Y, D, 245YZ〉
SW3	87-036-304-080		C-SW, SL1-1-2〈345Y, 345YZ〉
SW4	87-036-145-080	1A	C-SW SLIDE 1-1-3
SW5	87-036-020-010	1B	SW, SLIDE 2-2-2
SW6	87-036-110-010	0E	SW, PUSH SPPB 62
SW7	87-036-374-010	1A	SW, LEAF
TC1	87-011-154-010	0E	CAP, TRIMMER CER 6P
TC2	87-011-154-010	0E	CAP, TRIMMER CER 6P
TC3	87-011-155-010	0E	TRIMMER, CER 10P
TC4	87-011-155-010	0E	TRIMMER, CER 10P
TH100	87-026-256-090	0E	THMS, HT-100
VR1	87-024-326-010	1B	VOL 20KAX2 DIA8

CONTROL C.B

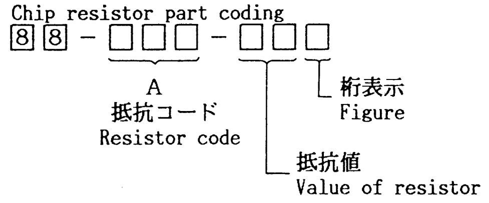
REF.NO	PART NO.	カンリ NO.	DESCRIPTION
C301	87-010-195-080		C-CAP, S 0.068-25 F〈345Y, 345YZ〉
C302	87-010-213-080		C-CAP, S 0.015-50 B〈345Y, 345YZ〉
C303	87-012-286-080		C-CAP, U 0.01-25 B〈345Y, 345YZ〉
C304	87-016-253-080		C-CAP, TN 33-4 F95V〈345Y, 345YZ〉
C305	87-010-800-080		C-CAP, TN1-10(A2)〈345Y, 345YZ〉
C306	87-012-286-080		C-CAP, U 0.01-25 B〈345Y, 345YZ〉
C307	87-010-746-080		C-CAP, TN 10-4〈345Y, 345YZ〉
C308	87-012-286-080		C-CAP, U 0.01-25 B〈345Y, 345YZ〉
C309	87-016-461-080		C-CAP, S 0.47-16 F〈345Y, 345YZ〉
C310	87-016-462-080	0E	C-CAP, S 1-16 F
C311	87-010-196-080	0E	C-CAP, S 0.1-25 F〈245Y, D, 245YZ〉
C311	87-010-831-080		C-CAP, U 0.1-16F〈345Y, 345YZ〉
C312	87-010-196-080	0E	C-CAP, S 0.1-25 F
C313	87-016-296-080	1A	C-CAP, TN 22-4 SV(A)
C314	87-010-315-080	0E	C-CAP, S 27P-50 CH
C315	87-010-149-080	0E	C-CAP, S 5P-50 CH
C316	87-010-152-080	0E	C-CAP, S 8P-50 CH
L301	87-005-784-080	1B	C-COIL, DD(5CDL)
LED1	87-017-828-070	0E	C-LED, SEC 1401C GRN
LED2	87-017-829-070	0E	C-LED, SEC 1901C ORN
LED3	87-017-827-070	0E	C-LED, SEC 1201C RED
SFR301	87-024-313-080	1A	C-SFR, 10K RH03
SP1	87-048-299-010		SPKR, DIA36〈345Y, 345YZ〉
SW301	87-036-145-080		C-SW SLIDE 1-1-3〈345Y, 345YZ〉
SW301	87-036-304-080	1A	C-SW, SL 1-1-2〈245Y, D, 245YZ〉
VR301	87-099-664-010	1D	VR, 100K B

HEAD FLEX. C.B

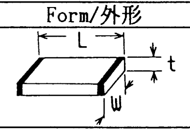
REF.NO	PART NO.	カンリ NO.	DESCRIPTION
SW8	87-036-357-019	1A	SW, SL 2-2-2(NC)
RPH1	87-046-408-019	2A	HEAD ASSY, R PH(W/PCB-C)

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

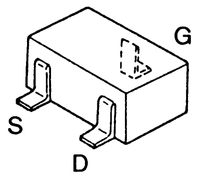
チップ抵抗部品コードの成り立ち
Chip resistor part coding



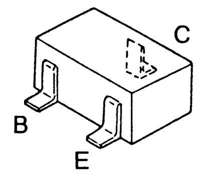
チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法(mm)				Resistor Code : A 抵抗コード : A
				Form/外形	L	W	t	
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.5 ~0.7	128

TRANSISTOR ILLUSTRATION



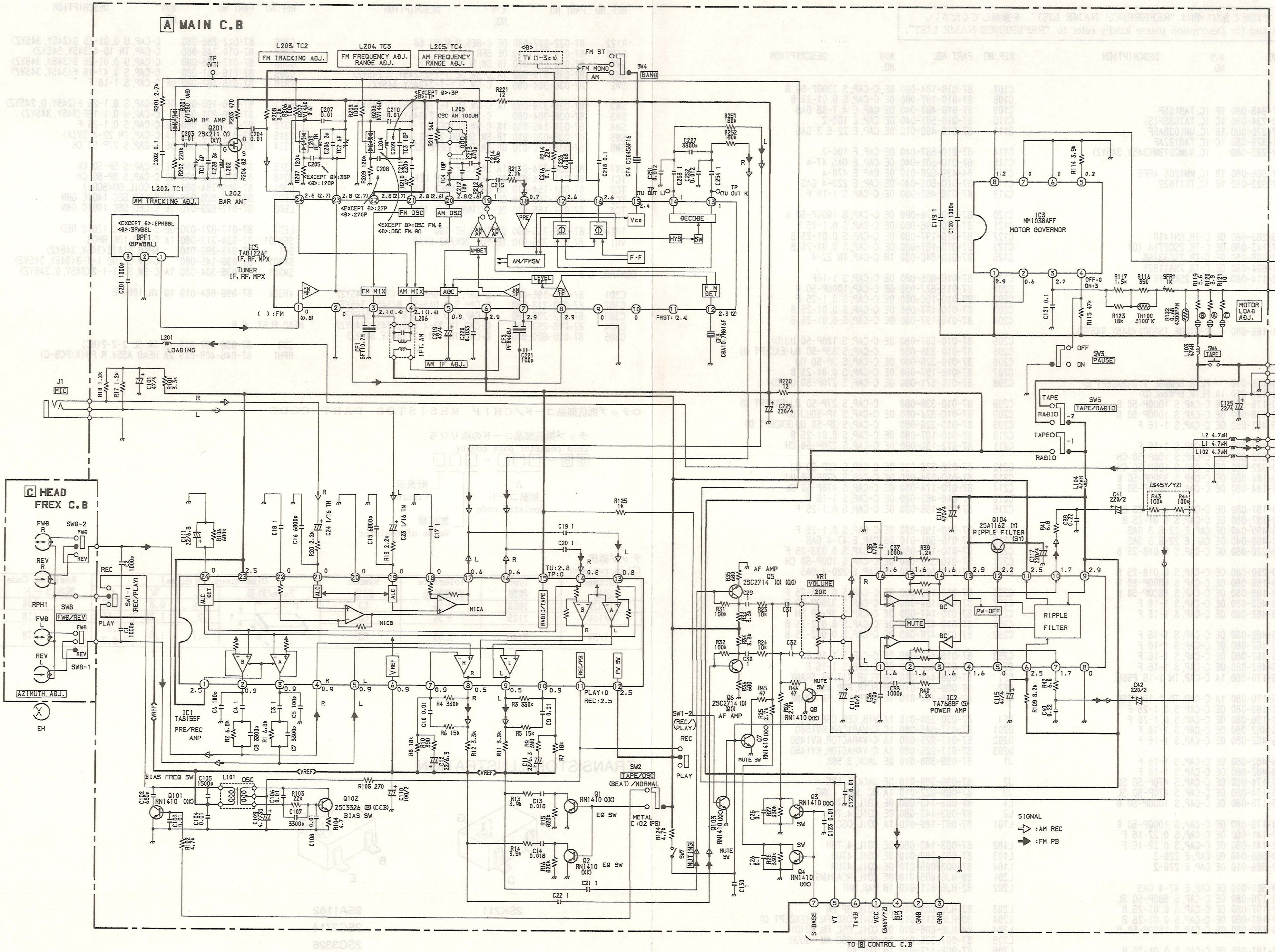
2SK211



2SA1162
2SC2714
2SC3326
RN1410

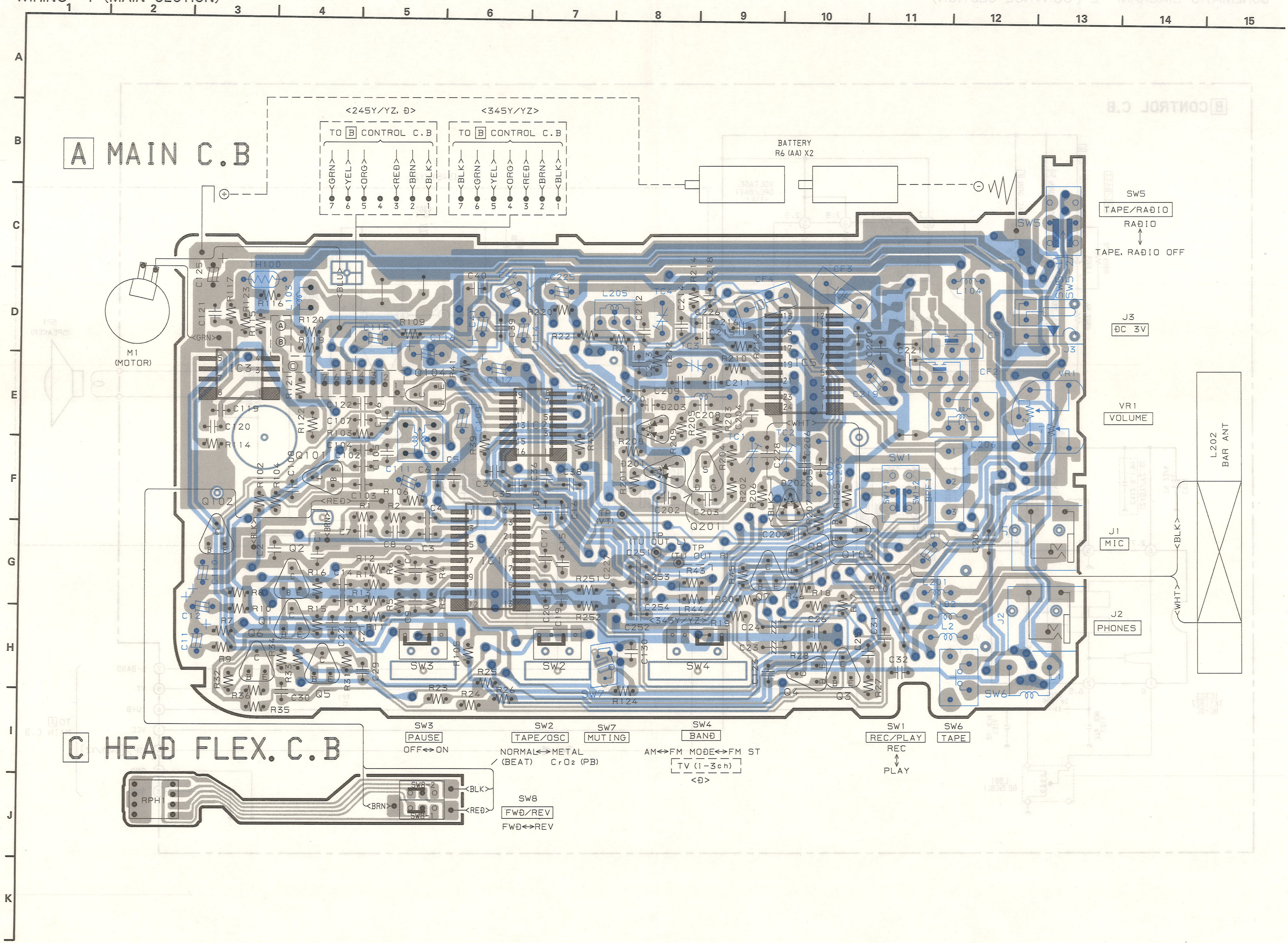
MC-Service

SCHEMATIC DIAGRAM - 1 (MAIN SECTION)



A MAIN C.B
C HEAD FREX C.B
L203 TC2
FM TRACKING ADJ.
L204 TC3
FM FREQUENCY ADJ. RANGE ADJ.
L205 TC4
AM FREQUENCY RANGE ADJ.
TV (1-3ch)
FM ST
FM MONO
AM
SW4 BAND
TP (VT)
Q201 2SK211 (Y) AM RF AMP
L202 BAR ANT
L202 TC1
AM TRACKING ADJ.
L205 OSC AM 100UH
FM OSC
AM OSC
BPF1 (BPWB8L)
IC5 TA8122AF IF, RF, MPX
TUNER IF, RF, MPX
FM MIX
AM MIX
AGC
AM/FMSW
LEVEL DET
DECODE
VCO
F-F
HYS
FM DET
FMST: (2.4)
( ) : FM
IFT, AM
AM IF ADJ.
CF1 SFT10.7M
CF2 PFB468J
CF3 CDA10.7M
CF4 CSB456F16
L201 LOADING
J1 MIC
IC3 MM1038AFF MOTOR GOVERNOR
M1 (MOTOR)
MOTOR LOAD ADJ.
SW3 PAUSE
OFF
ON
SW6 TAPE
J3 DC3V
BATTRY R6 (AA) X2
SW5 TAPE/RADIO
TAPE
RADIO
J2 PHONES
L2 4.7uH
L1 4.7uH
L102 4.7uH
(345Y/YZ)
Q104 2SA1162 (Y) RIPPLE FILTER (SY)
RIPPLE FILTER
PW-OFF
MUTE
IC2 TA7668F (S) POWER AMP
VR1 VOLUME 20K
Q5 2SC2714 (O) (QO) AF AMP
Q6 2SC2714 (O) AF AMP
Q7 RN1410 (XK) MUTE SW
Q8 RN1410 (XK) MUTE SW
IC1 TA8155F PRE/REC AMP
ALC
ALC DET
MICA
MICB
RADIO/TAPE
REC/PB
PW SW
VREF
PLAY: 0 REC: 2.5
TU: 2.8 TP: 0
SW1-1 (REC/PLAY)
SW1-2 (REC/PLAY)
REC
PLAY
SW2 TAPE/OSC (BEAT)/NORMAL
METAL CrO2 (PB)
SW7 MUTING
Q1 RN1410 (XK) EQ SW
Q2 RN1410 (XK) EQ SW
Q3 RN1410 (XK) SW
Q4 RN1410 (XK)
Q103 RN1410 (XK) MUTE SW
BIAS FREQ SW
L101 OSC
Q101 RN1410 (XK)
Q102 2SC3326 (B) (CCB) BIAS SW
FWD R
REV
FWD L
SW8-2
SW8-1
SW8 FWD/REV
RPH1
AZIMUTH ADJ.
EH
S-BASS
VT
Tu+B
VCC
GND
TO B CONTROL C.B
SIGNAL
: AM REC
: FM PB

WIRING – 1 (MAIN SECTION)



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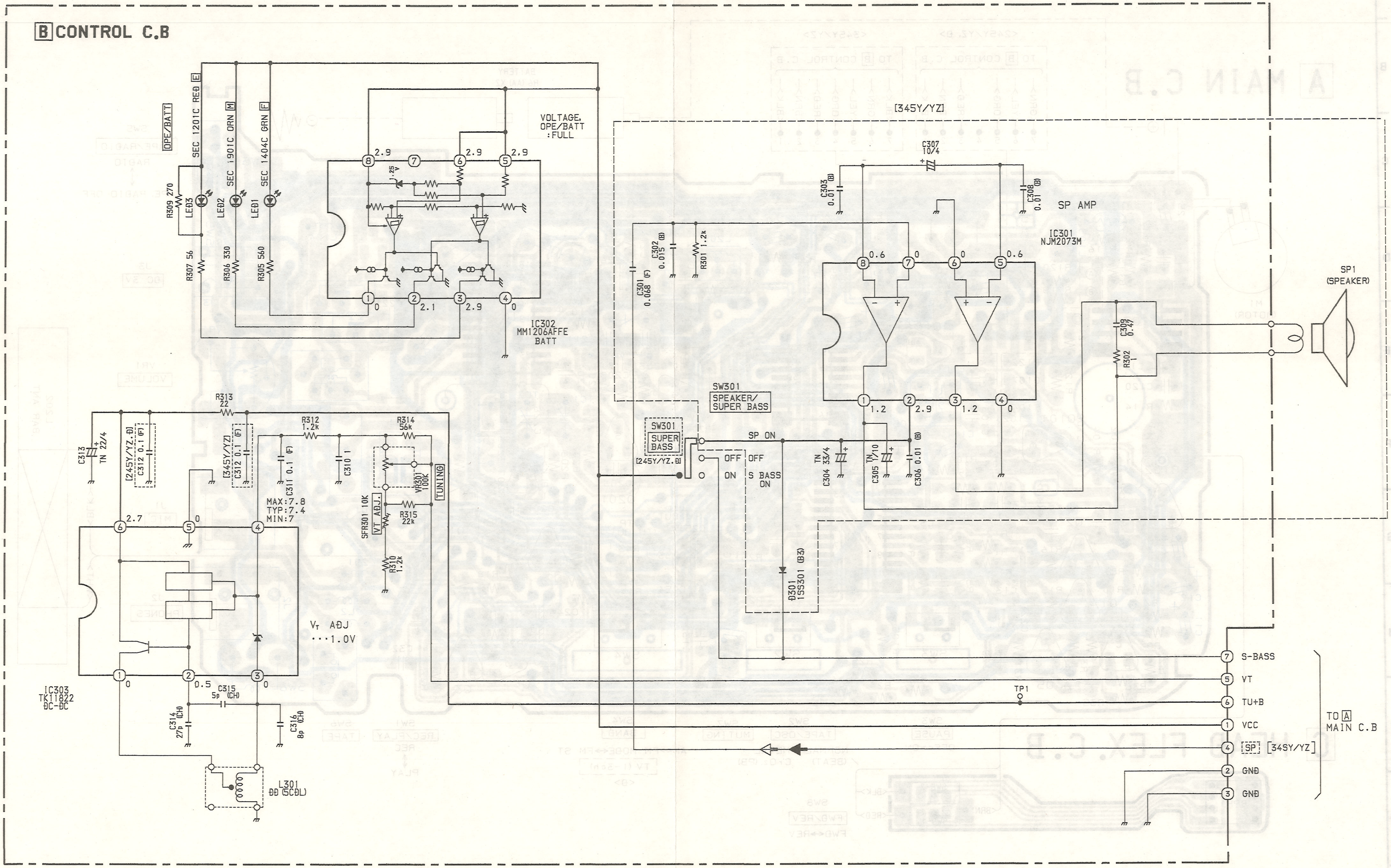
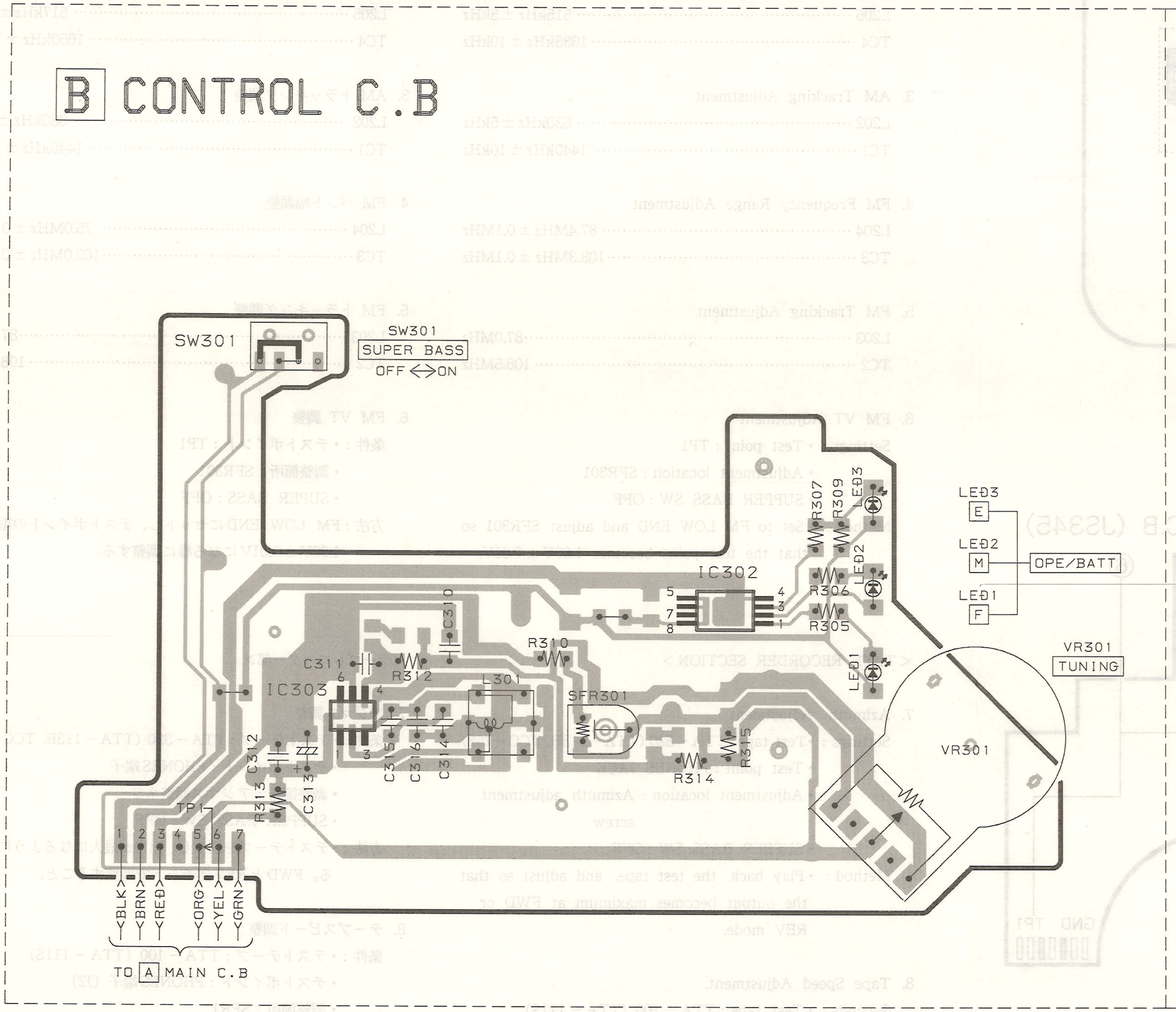
IC1
IC2
IC5
Q101
Q102
Q103
Q104
Q201
Q2
Q3
Q4
Q5
Q6
Q7
Q8
D201
D202
D203
CF1
CF2
CF3
CF4
L1
L2
L104
L201
L202
L205
L206
TC1
TC2
TC3
TC4
VR1
TP
(VT)
TP
(TU OUT L)
TP
(TU OUT R)
SW5
TAPE/RADIO
RADIO
TAPE, RADIO OFF
J3
DC 3V
VR1
VOLUME
L202
BAR ANT
J1
MIC
J2
PHONES
<BLK>
<WHT>
SW1
SW2
SW3
SW4
SW6
SW7
SW3
PAUSE
OFF↔ON
SW2
TAPE/OSC
NORMAL↔METAL
(BEAT) CrO2 (PB)
SW7
MUTING
SW4
BAND
AM↔FM MODE↔FM ST
TV (1–3ch)
<D>
SW1
REC/PLAY
REC
PLAY
SW6
TAPE
C HEAD FLEX. C.B
RPH1
SW8-2
SW8-1
<BLK>
<BRN>
<RED>
SW8
FWD/REV
FWD↔REV

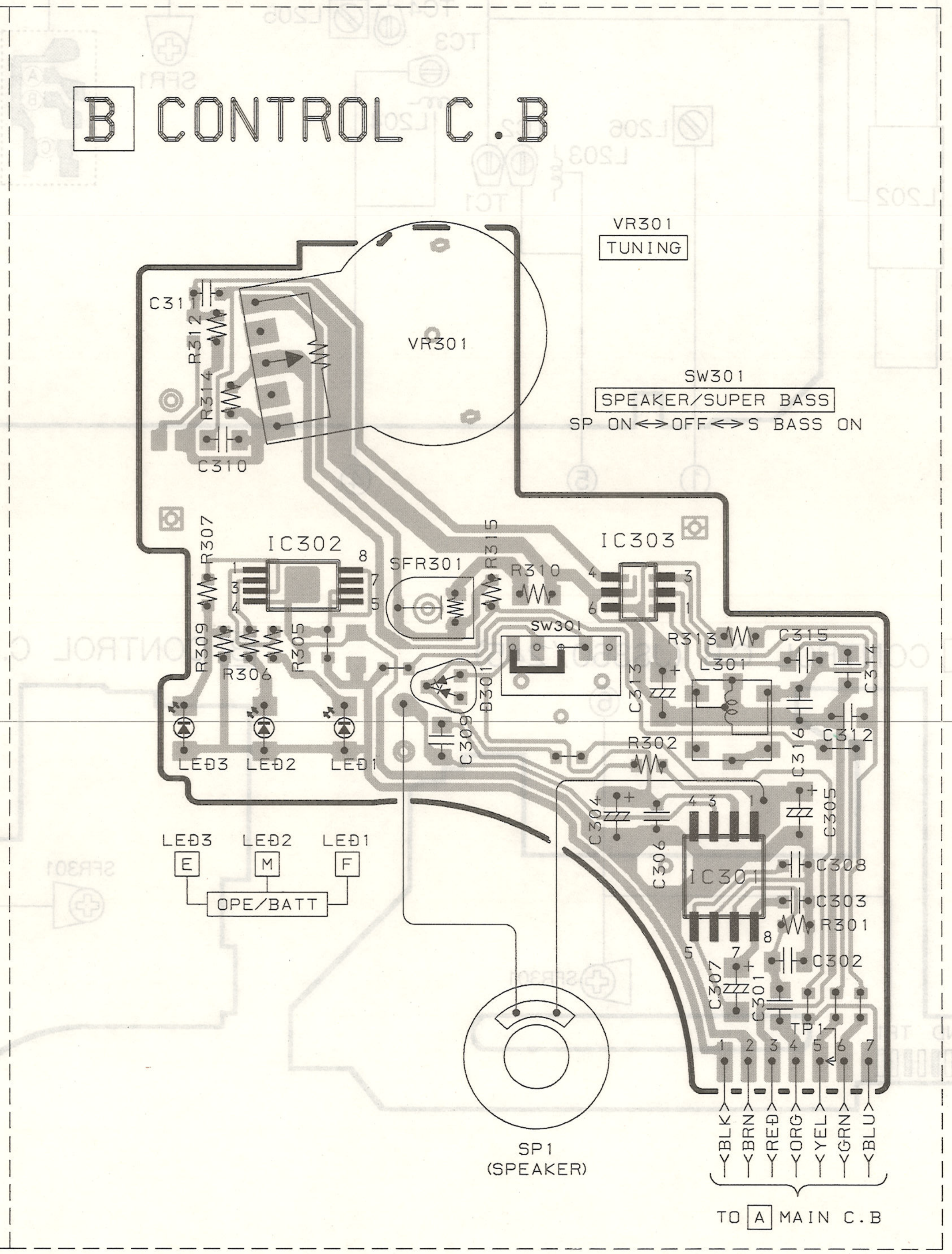
SCHEMATIC DIAGRAM – 2 (CONTROL SECTION)


B CONTROL C.B
OPE/BATT
SEC 1201C RED E
SEC 1901C ORN M
SEC 1404C GRN F
R309 270
LED3
LED2
LED1
R307 56
R306 330
R305 560
VOLTAGE, OPE/BATT :FULL
2.9
2.9
2.9
1.25V
8
7
6
5
1
2
3
4
0
2.1
2.9
0
IC302 MM1206AFFE BATT
[345Y/YZ]
C307 10/4
C303 0.01 (B)
C308 0.01 (B)
SP AMP
IC301 NJM2073M
C301 0.068 (F)
C302 0.015 (B)
R301 1.2k
0.6
0
0
0.6
SP1 (SPEAKER)
C309 0.47
R302 1
1.2
2.9
1.2
0
SW301 SPEAKER/ SUPER BASS
SW301 SUPER BASS
[245Y/YZ.B]
SP ON
OFF
OFF
ON
S BASS ON
TN C304 33/4
TN C305 10
C306 0.01 (B)
D301 1SS301 (B3)
R313 22
C313 TN 22/4
[245Y/YZ.B] C312 0.1 (F)
[345Y/YZ] C312 0.1 (F)
R312 1.2k
R314 56k
C311 0.1 (F)
C310 1
VR301 100K
TUNING
SFR301 10K VT ADJ.
R315 22k
R310 1.2k
MAX:7.8 TYP:7.4 MIN:7
2.7
0
6
5
4
VT ADJ ···1.0V
1
2
3
0
0.5
0
C315 5p (CH)
C314 27p (CH)
C316 8p (CH)
IC303 TK11822 DC-DC
L301 DD (SCDL)
TP1
7 S-BASS
5 VT
6 TU+B
1 VCC
4 SP [345Y/YZ]
2 GND
3 GND
TO A MAIN C.B

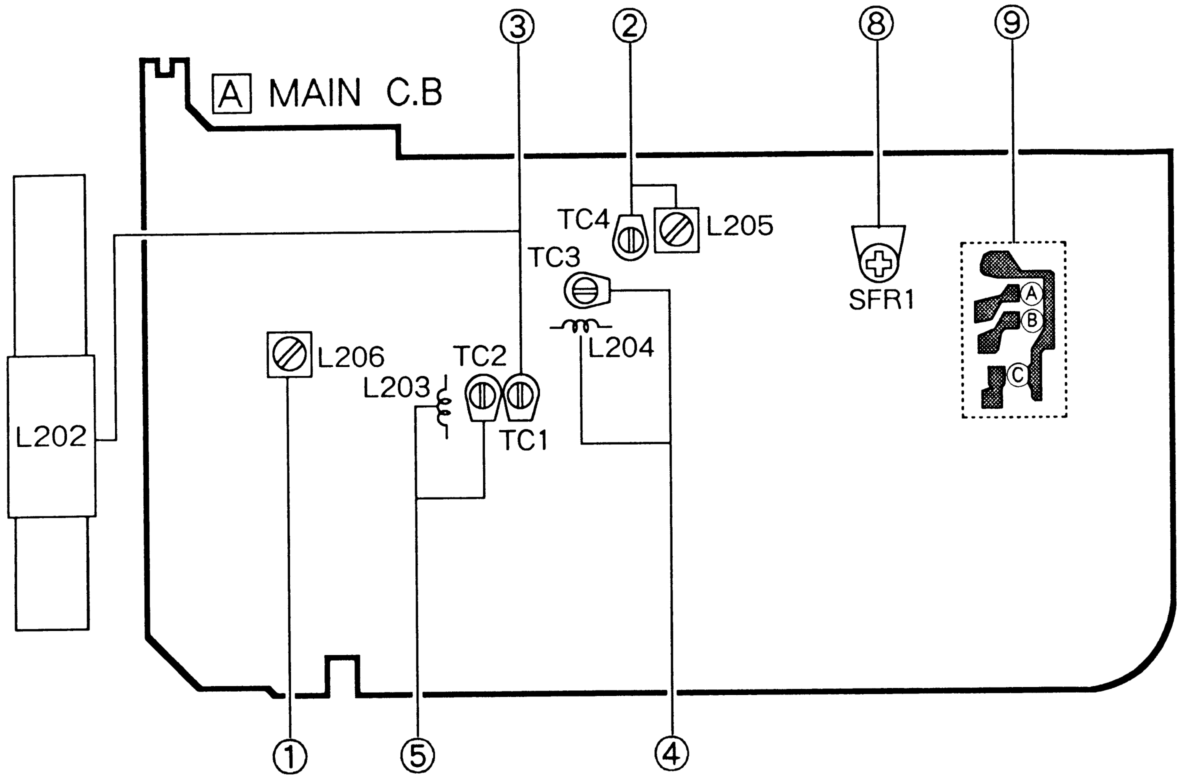
< HS-JS245／360 >

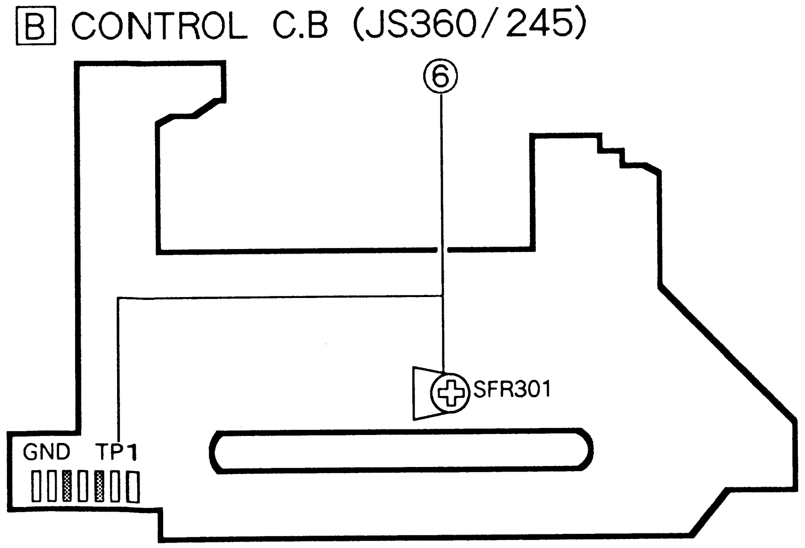

B CONTROL C.B
SW301
SW301
SUPER BASS
OFF ⟷ ON
LED3
LED2
LED1
E
M
F
OPE/BATT
VR301
TUNING
VR301
IC302
IC303
SFR301
L301
R305
R306
R307
R309
R310
R312
R313
R314
R315
C310
C311
C312
C313
C314
C315
C316
TP1
BLK
BRN
RED
ORG
YEL
GRN
TO A MAIN C.B

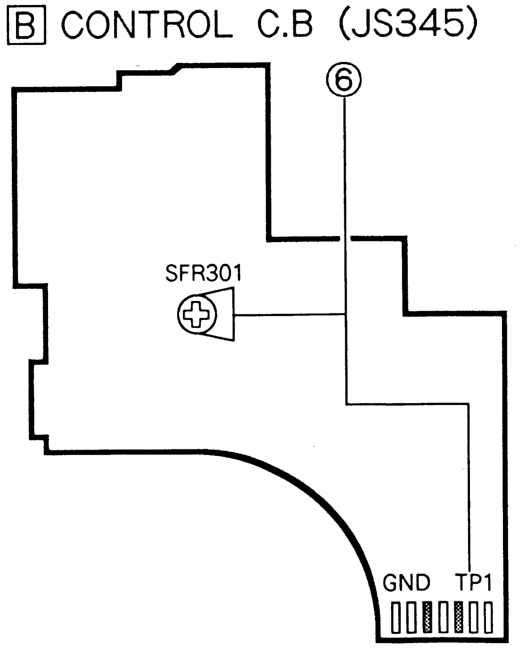
< HS-JS345 >


B CONTROL C.B
VR301
TUNING
VR301
SW301
SPEAKER/SUPER BASS
SP ON⟷OFF⟷S BASS ON
SW301
IC301
IC302
IC303
SFR301
L301
LED3
LED2
LED1
E
M
F
OPE/BATT
R301
R302
R305
R306
R307
R309
R310
R312
R313
R314
R315
C301
C302
C303
C304
C305
C306
C307
C308
C309
C310
C311
C312
C313
C314
C315
C316
TP1
SP1
(SPEAKER)
BLK
BRN
RED
ORG
YEL
GRN
BLU
TO A MAIN C.B

ADJUSTMENT







MC-Service

< RADIO SECTION >

1. AM IF Adjustment

L206 ·········· 468kHz ± 2.5kHz

2. AM Frequency Range Adjustment

L205 ·········· 515kHz ± 5kHz
TC4 ·········· 1635kHz ± 10kHz

3. AM Tracking Adjustment

L202 ·········· 630kHz ± 5kHz
TC1 ·········· 1440kHz ± 10kHz

4. FM Frequency Range Adjustment

L204 ·········· 87.4MHz ± 0.1MHz
TC3 ·········· 108.3MHz ± 0.1MHz

5. FM Tracking Adjustment

L203 ·········· 87.0MHz
TC2 ·········· 108.5MHz

6. FM VT Adjustment

Settings : • Test point : TP1
• Adjustment location : SFR301
• SUPPER BASS SW : OFF
Method : • Set to FM LOW END and adjust SFR301 so that the test point becomes 1.00V ± 0.01V.

< TAPE RECORDER SECTION >

7. Azimuth Adjustment

Settings : • Test tape : TTA – 320 (TTA – 113B, TCC – 152)
• Test point : PHONES JACK
• Adjustment location : Azimuth adjustment screw
• SUPPER BASS SW : OFF
Method : • Play back the test tape, and adjust so that the output becomes maximum at FWD or REV mode.

8. Tape Speed Adjustment.

Settings : • Test tape : TTA – 100 (TTA – 111S)
• Test point : PHONES JACK (J2)
• Adjustment location : SFR1
Method : • Play back the test tape, adjust for 3000Hz at FWD and ± 45Hz at REV.

<ラジオ部>

1. AM IF 調整

L206 ·········· 468kHz ± 2.5kHz

2. AM バンド幅調整

L205 ·········· 517kHz ± 5kHz
TC4 ·········· 1650kHz ± 10kHz

3. AM トラッキング調整

L202 ·········· 630kHz ± 5kHz
TC1 ·········· 1440kHz ± 10kHz

4. FM バンド幅調整

L204 ·········· 75.0MHz ± 0.1MHz
TC3 ·········· 109.0MHz ± 0.1MHz

5. FM トラッキング調整

L203 ·········· 87.0MHz
TC2 ·········· 108.5MHz

6. FM VT 調整

条件 : • テストポイント : TP1
• 調整箇所 : SFR301
• SUPER BASS : OFF
方法 : FM LOW ENDにセットし、テストポイントの電圧が1.00V ± 0.01Vになる様に調整する。

<テープレコーダー部>

7. アジマス調整

条件 : • テストテープ : TTA – 320 (TTA – 113B, TCC – 152)
• テストポイント : PHONES端子
• 調整箇所 : アジマス調整ネジ
• SUPPER BASS SW : OFF
方法 : • テストテープを再生し、出力が最大になるように調整する。FWDとREV各モードで調整すること。

8. テープスピード調整

条件 : • テストテープ : TTA – 100 (TTA – 111S)
• テストポイント : PHONES端子 (J2)
• 調整箇所 : SFR1
方法 : • テストテープを再生し、FWD時3000Hz、REV時はFWDに対して ± 45Hzになるように調整する。

9. Motor load Adjustment

To discriminate whether load adjustment is necessary or not.

Perform the STOP→PLAY and REVERSE operations (or PAUSE ON → OFF) after the motor wow is replaced. When the tape starts running smooth, this adjustment is not necessary. If wow is conspicuous at the begining of the tape-run, perform this adjustment following the procedure below.

• Simple load adjustmet ……………………………………………… (See the SCHEMATIC and WIRING DIAGRAMS)

1. Solder only medium resistor pattern (B) of the MOTOR AND GOVERNOR MATCHING ADJ. resistor group.
2. Set the tape speed (using speed adjustment SFR).
3. Restrict the motor rotation by hand. (or turn PAUSE on)
4. Remove your hand and listen to the begining of the tape-run.
5. When the rise of tape running is smooth, on more adjustment is necessary. If wow continues for 1 to 2 seconds at the rise time, reduce the combined resistance according to procedure 6 and check that the tape starts running smooth.
6. Solder the resistor pattern according to the table below.

Pattern	(Procedure 1 above)	Step (i)	Step (ii)	Step (iii)
3.9 Ω (A)	Open	Open	Solder	Open
5.6 Ω (B)	Solder	Open	Open	Solder
10 Ω (C)	Open	Solder	Solder	Solder

7. Finally re-check the tape speed.

Caution : Cool the patterns down to normal temperature after soldering. If the pattern remains heated, the governor circuit does not operate normally.

9. モーター負荷調整

負荷調整が必要とされる場合

モーター交換後、STOP→PLAY、PAUSE ON→OFF、を行いテープ走行の立ち上がりがスムーズにゆけば、当調整は必要としません。立ち上がりにてWOWが悪い場合は、下記に従って当調整を行って下さい。

• 負荷調整（簡易）法

1. 負荷調整抵抗群のうち、5.6 Ω（B）のパターンのみハンダ付けする。
2. テープスピードを合わせる（スピード調整用SFRにて）
3. モーター回転を指にて拘束する。(又は PAUSE ON)
4. 拘束を解除し、テープ走行立ち上がり状況を聴く。
5. 立ち上がりがスムーズであれば以上で終了です。
   もし立ち上がりにて、1～2秒間WOWが続く様であれば、次の調整法に従って合成抵抗値を減らしてゆき、立ち上がりがスムーズになる点を選ぶ。
6. 次の手順にて抵抗パターンのハンダ処理を行う。

パターン	上記 1	ステップ (1)	ステップ (2)	ステップ (3)
3.9 Ω (A)			●	
5.6 Ω (B)	●			●
10 Ω (C)		●	●	●

●：ハンダ・タッチ場所

7. テープスピードを再確認する。

注意：ハンダ処理後はパターンを冷やし常温にして下さい。パターンを熱したままだとガバナ回路が正常動作しません。

PRACTICAL SERVICE FIGURE

< RADIO SECTION >

Sensitivity :	
(IHF,THD 3%)	FM 14dB ± 5dB (88MHz)
	14dB ± 5dB (100MHz)
	14dB ± 5dB (108MHz)
(S/N 10dB)	AM 50dB ± 4dB (630kHz)
	49dB ± 4dB (999kHz)
	49dB ± 4dB (1440kHz)
Intermediate frequency :	FM 10.7MHz ± 0.1MHz
	AM 468kHz ± 3.0kHz
FM stereo separation :	FM 20dB ± 4dB (100MHz)

< TAPE RECORDER SECTION >

Tape speed :	3015Hz ± 50Hz
Wow & flutter :	Less than 0.52% (RMS)
Take-up torque :	25~40g-cm (FWD, REV)
F.F torque :	More than 70g-cm
Rew torque :	More than 70g-cm
Back tension :	1.0g-cm~4.0g-cm (FWD, REV)
S/N ratio :	More than 44dB (DC,PB)
Distortion :	Less than 3.0% (DC,PB)
Noise level :	Less than 5.0mV (Vol MAX, DC)
	Less than 0.3mV (Vol MIN, DC)
Frequency response :	63Hz ± 4dB~8kHz ± 4.5dB (NORMAL)
	63Hz ± 4dB~10kHz ± 5dB (CrO_2, METAL)

<ラジオ部>

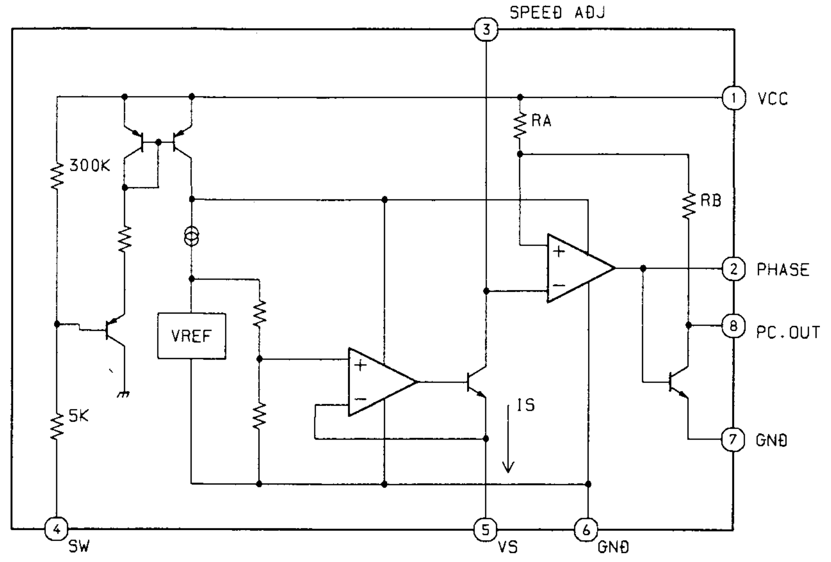
雑音制限感度：	
(IHF,THD 3%)	FM 14dB ± 5dB (88MHz)
	14dB ± 5dB (100MHz)
	14dB ± 5dB (108MHz)
(S/N 10dB)	AM 50dB ± 4dB (630kHz)
	49dB ± 4dB (999kHz)
	49dB ± 4dB (1440kHz)
中間周波数：	FM 10.7MHz ± 0.1MHz
	AM 468kHz ± 3.0kHz
FMステレオ分離度：	FM 20dB ± 4dB (100MHz)

<テープレコーダー部>

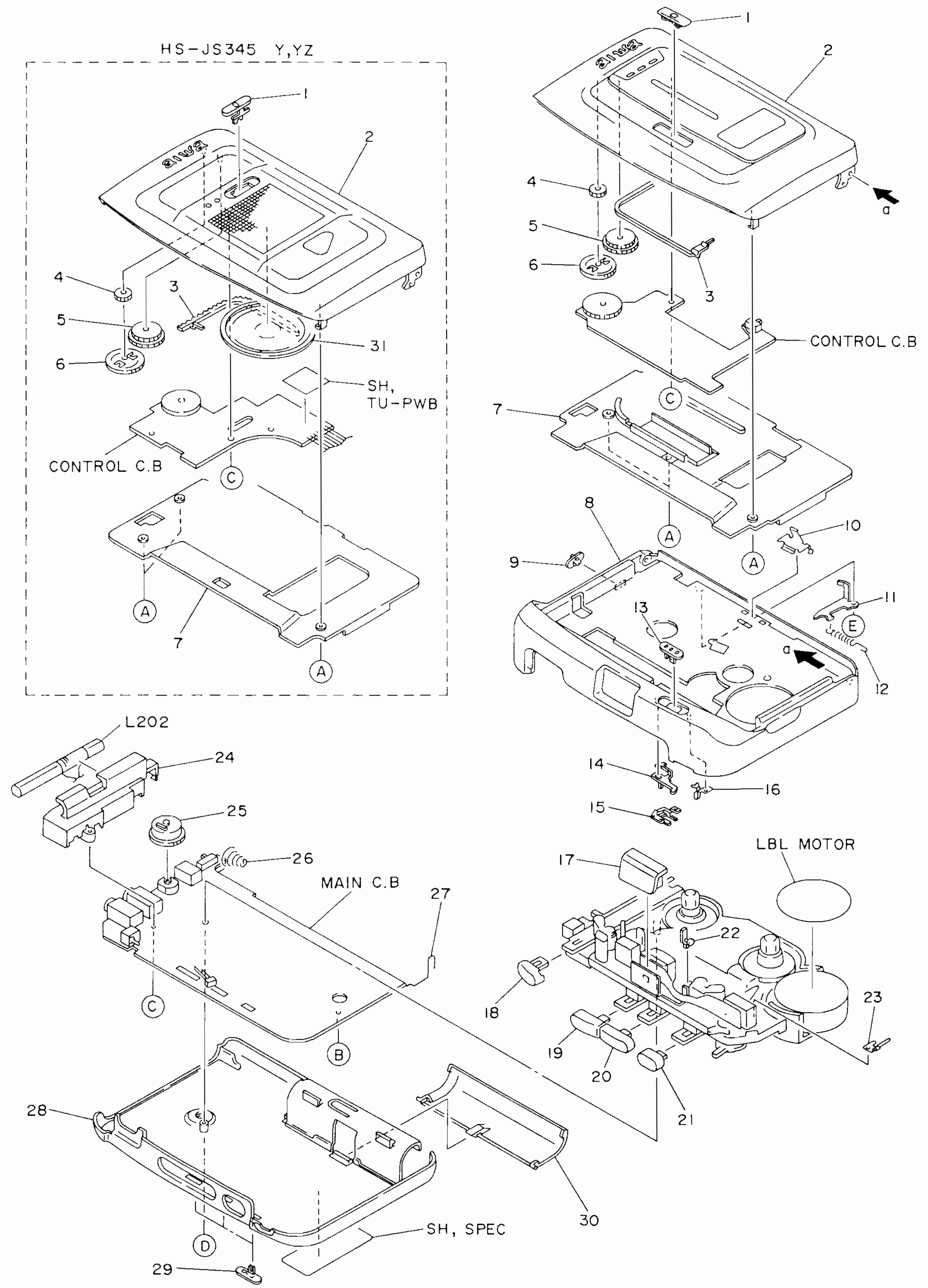
テープスピード：	3015Hz ± 50Hz
ワウ・フラッター：	0.52%以下 (RMS)
巻き取りトルク：	25~40g-cm (FWD, REV)
早送りトルク：	70g-cm以上
巻き戻しトルク：	70g-cm以上
バックテンション：	1.0g-cm~4.0g-cm
SN比：	44dB以上 (DC,PB)
歪率：	3.0%以下 (DC,PB)
ノイズレベル：	5.0mV以下 (VOL MAX, DC)
	0.3mV以下 (VOL MIN, DC)
周波数特性：	63Hz ± 4dB~8kHz ± 4.5dB (NORMAL)
	63Hz ± 4dB~10kHz ± 5dB (CrO_2, METAL)

IC BLOCK DIAGRAM

IC, MM1038AF



MECHANICAL EXPLODED VIEW 1／1

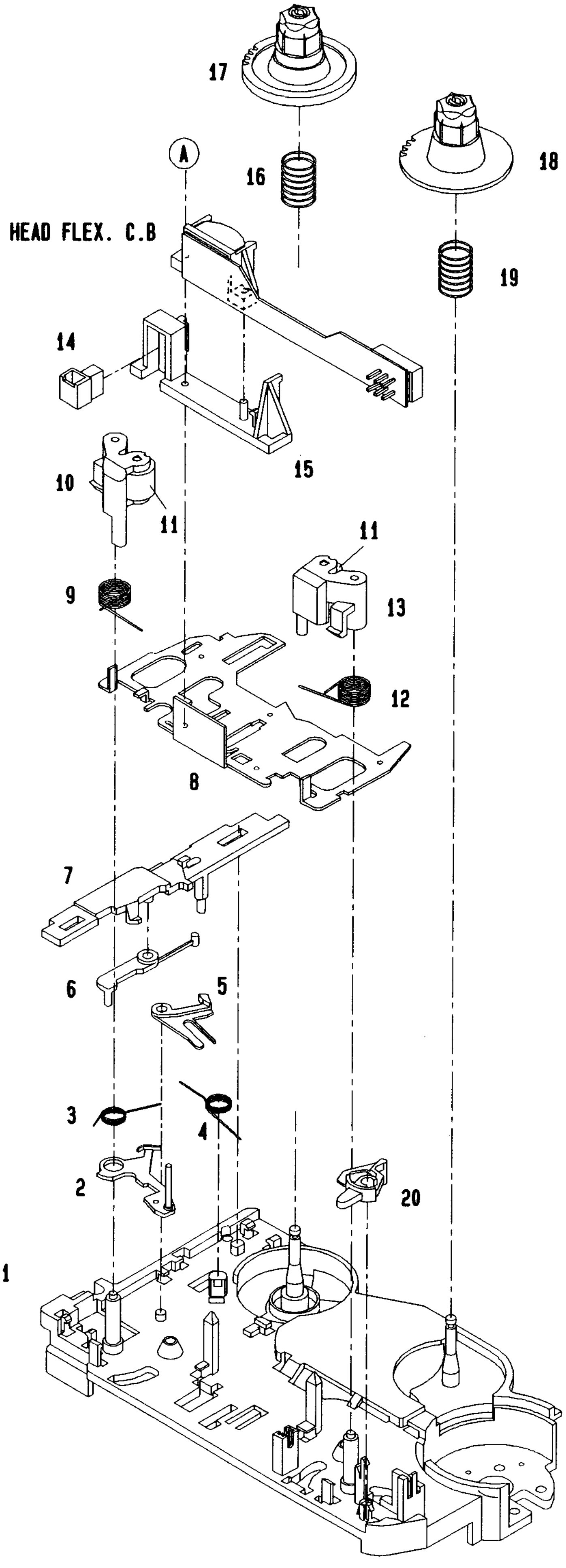


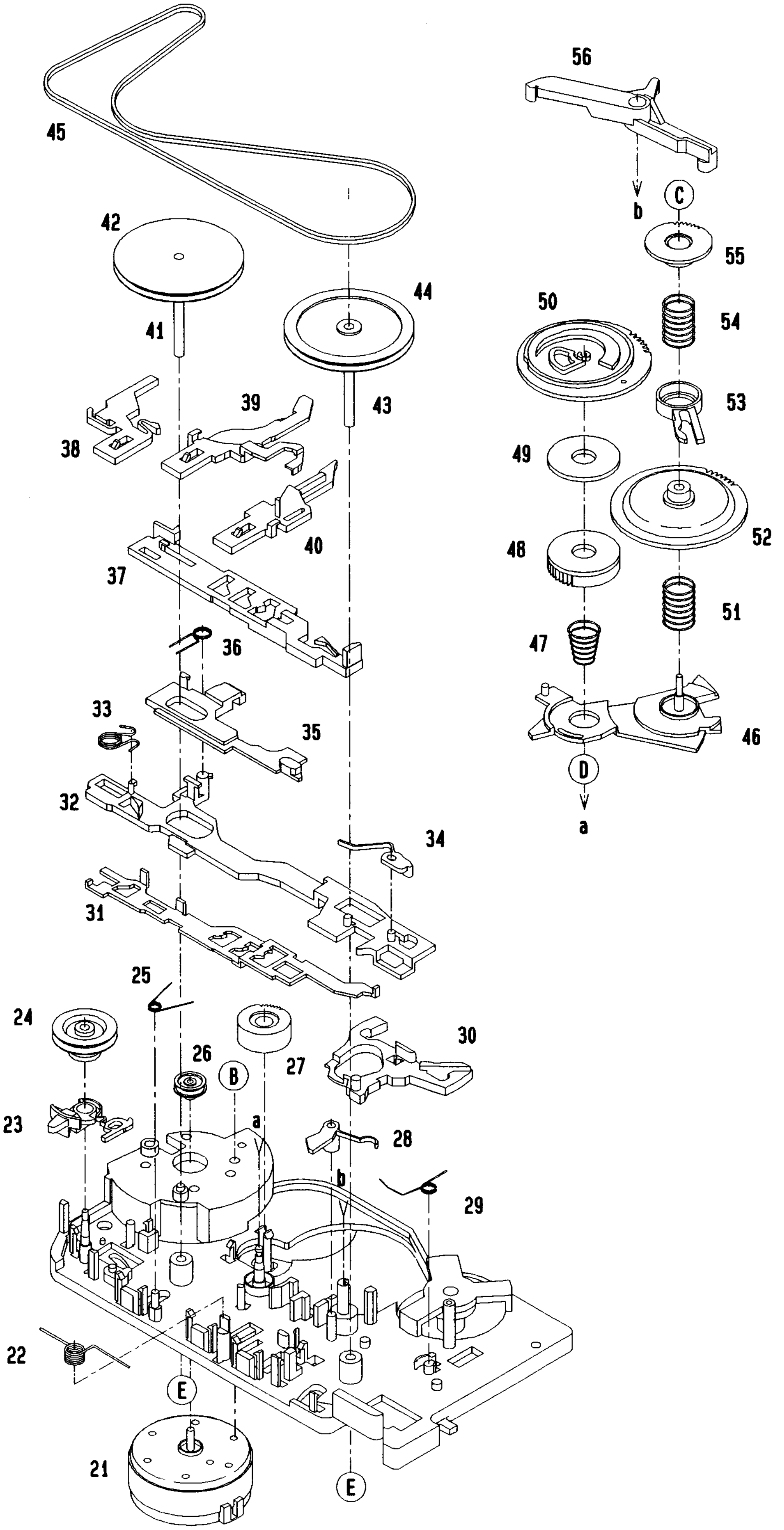
MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-HJ7-004-010	0E	KNOB, SL SB〈JS245, JS360〉
1	84-HJ6-013-010		KNOB, SLIDE, SP-SB〈JS345〉
2	09-028-174-010	2A	LID, CASS ASSY〈JS360〉
2	09-028-175-010		LID, CASS ASSY〈JS345〉
2	09-028-173-010		LID, CASS ASSY〈JS245〉
3	84-HJ7-005-010	0E	POINTER〈JS245, JS360〉
3	84-HJ6-019-010		POINTER, TU〈JS345〉
4	82-HJ6-206-010	0E	GEAR, TUN B
5	82-HJ6-205-110	0E	GEAR TUN A
6	82-HJ6-016-310	0E	KNOB TUN
7	84-HJ7-201-010	1B	COVER, CASS〈JS245, JS360〉
7	84-HJ6-201-010		COVER, CASS〈JS345〉
8	84-HJ6-005-010	1B	FRAME, CENTER
9	84-HJ6-014-010	0E	KNOB SLIDE, TR
10	84-HJ6-214-010	0E	SPR, C-PUSH
11	84-HJ6-203-010	0E	LVR, RP
12	84-HJ6-209-010	0E	SPR-E, RP
13	84-HJ6-017-010	0E	KNOB, OPEN
14	84-HJ6-204-010	1A	LVR, C-LOCK
15	84-HJ6-206-010	0E	HLDR, EL
16	84-HJ6-210-010	0E	SPR, EL
17	84-HJ6-008-010	0E	P-BUTTON, PLAY
18	84-HJ6-012-010	0E	P-BUTTON, REC
19	84-HJ6-011-010	0E	P-BUTTON, REW
20	84-HJ6-010-010	0E	P-BUTTON, FF
21	84-HJ6-009-010	0E	P-BUTTON, STOP
22	84-HJ6-205-010	1A	LVR, E-LOCK
23	84-HJ6-211-010	0E	SPR, PU
24	84-HJ6-202-010	1A	HLDR, ANT
25	84-506-028-110	0E	KNOB VOLUME
26	84-HJ6-208-010	0E	TERM, BATT M
27	84-HJ6-207-010	0E	TERM, BATT P
28	84-HJ6-030-010		CAB, REAR ASSY〈EXCEPT JS360〉
28	84-HJ7-013-010	1C	CAB, REAR D ASSY〈JS360〉
29	84-HJ6-015-010	0E	KNOB, SL A
30	84-HJ6-007-010	0E	LID, BATT
31	87-048-299-010		SPKR, DIA36〈JS345〉
A	87-067-385-010	0E	SCREW VT 1.4X2.5 HL
B	87-263-533-310	0E	V+1.7-6 CR
C	87-067-384-010	0E	VT+1.4-3.5HL
D	87-067-430-010	0E	VT FOR RESIN 1.4-5 BLK HL
E	87-078-124-010	0E	S, HINGE 1.4-0.9-2 HL

TAPE MECHANISM EXPLODED VIEW 1/1


17
A
16
18
HEAD FLEX. C.B
19
14
15
10
11
11
9
13
12
8
7
6
5
3
4
2
20
1

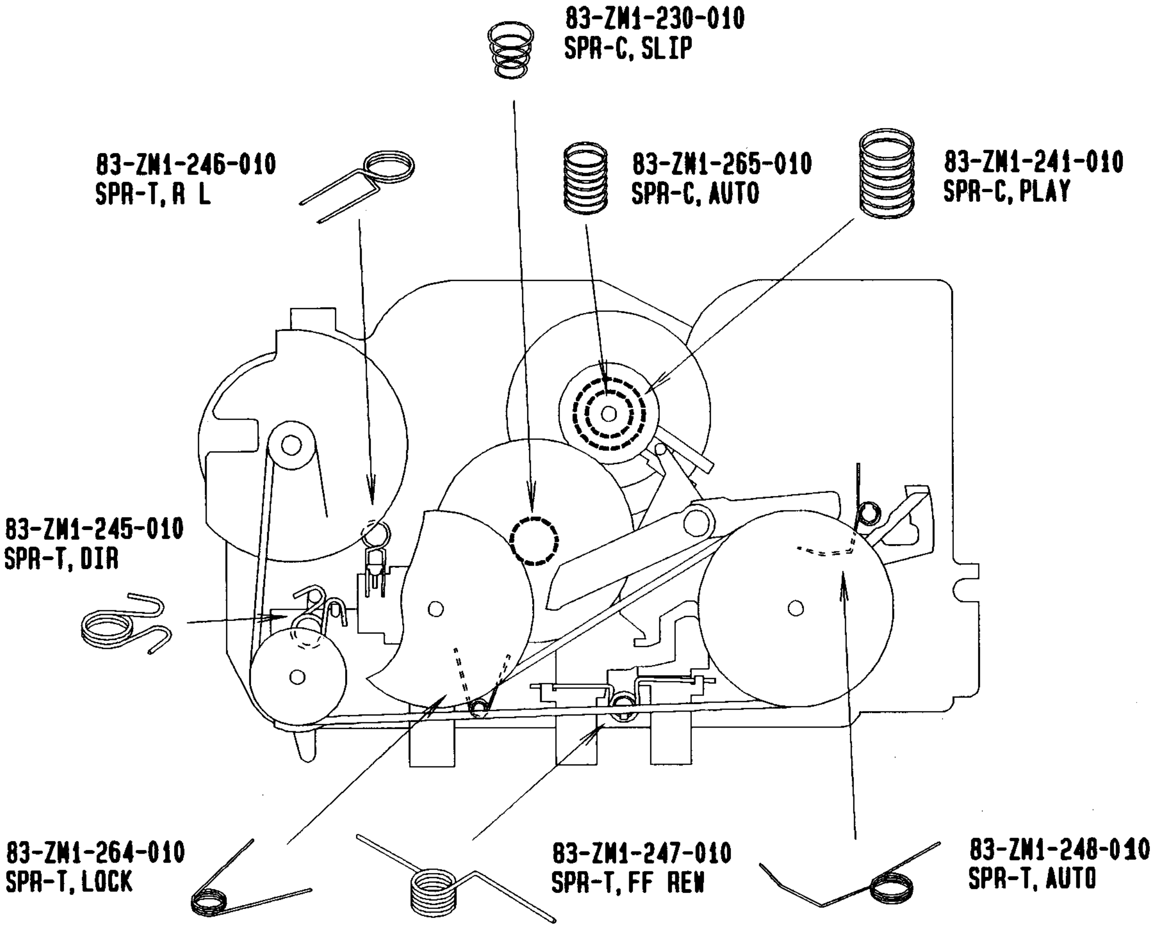

b
C
D
a
B
a
b
E
E

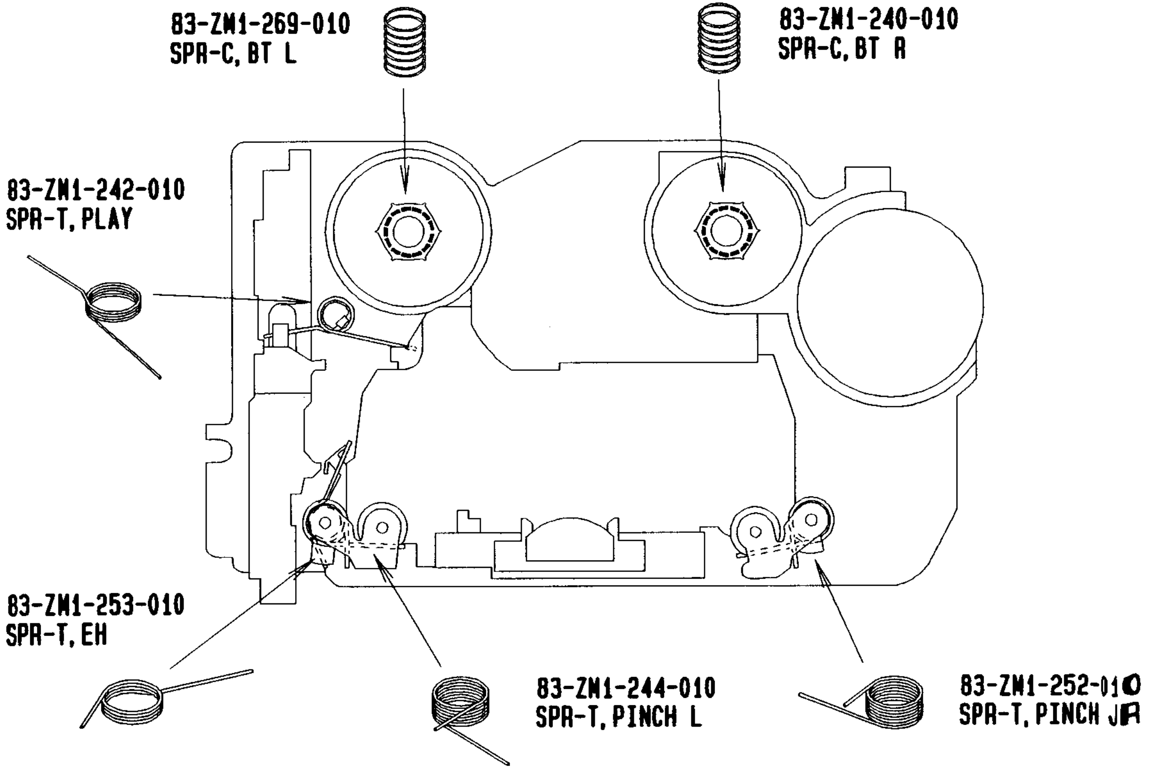
TAPE MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-ZM1-201-01K	1B	CHAS, MAIN
2	83-ZM1-272-11K	0E	LVR ASSY, EH
3	83-ZM1-253-010	0E	SPR-T, EH
4	83-ZM1-242-010	0E	SPR-T, PLAY
5	83-ZM1-260-010	0E	LVR, REC LOCK
6	83-ZM1-250-010	0E	LVR, REC
7	83-ZM1-249-010	0E	LVR, BTN REC
8	83-ZM1-206-01K	0E	LVR, BTN PLAY
9	83-ZM1-244-010	0E	SPR-T, PINCH L
10	83-ZM1-220-010	0E	LVR, PINCH L
11	83-ZM1-255-010	0E	PINCH ROL ASSY
12	83-ZM1-252-010	0E	SPR-T, PINCH JR
13	83-ZM1-219-010	0E	LVR, PINCH R
14	86-541-559-010	1C	EH 2
15	83-ZM1-263-01K	0E	GUIDE, TAPE
16	83-ZM1-269-010	0E	SPR-C, BT L
17	83-ZM1-235-01K	0E	GEAR, REEL L
18	83-ZM1-234-01K	0E	GEAR, REEL R
19	83-ZM1-240-010	0E	SPR-C, BT R
20	83-ZM1-210-010	0E	BTN DIR
21	87-045-355-019	1D	MOTOR (BCH3B13)
22	83-ZM1-247-010	0E	SPR-T, FF REW
23	83-ZM1-266-01K	0E	BTN, MODE CHG
24	83-ZM1-236-01K	0E	PULLEY, BELT
25	83-ZM1-264-010	0E	SPR-T, LOCK
26	83-ZM1-237-01K	0E	PULLEY, MOTOR
27	83-ZM1-233-010	0E	GEAR, R
28	83-ZM1-267-010	0E	LVR, DEF AUTO
29	83-ZM1-248-010	0E	SPR-T, AUTO
30	83-ZM1-211-010	0E	LINK, AUTO
31	83-ZM1-216-01K	0E	LVR, LOCK
32	83-ZM1-214-01K	0E	LVR, DIR
33	83-ZM1-245-010	0E	SPR-T, DIR
34	83-ZM1-268-010	0E	LVR, REC AUTO
35	83-ZM1-215-01K	0E	LVR, FR
36	83-ZM1-246-010	0E	SPR-T, R L
37	83-ZM1-261-010	0E	LVR, CUE REV
38	83-ZM1-209-010	0E	LVR, BTN STOP
39	83-ZM1-207-01K	0E	LVR, BTN FF
40	83-ZM1-208-01K	0E	LVR, BTN REW
41	83-ZM1-278-010	0E	SHAFT, CAP 2.0SEF
42	83-ZM1-222-010	1B	FLY-WHL, R
43	83-ZM1-275-019	0E	SHAFT, CAPSTAN 2.0B
44	83-ZM1-225-010	1A	FLY-WHL, L
45	83-ZM1-259-010	0E	BELT
46	83-ZM1-217-01K	0E	LVR, PLAY
47	83-ZM1-230-010	0E	SPR-C, SLIP
48	83-ZM1-229-01K	0E	GEAR, SLIP
49	83-ZM1-228-019	0E	FELT
50	83-ZM1-227-01K	0E	GEAR, AUTO
51	83-ZM1-241-010	0E	SPR-C, PLAY
52	83-ZM1-231-010	0E	GEAR, PLAY
53	83-ZM1-218-010	0E	LVR, SLIP
54	83-ZM1-265-010	0E	SPR-C, AUTO
55	83-ZM1-232-010	0E	GEAR, FR
56	83-ZM1-212-010	0E	LVR, AUTO
A	87-078-111-019	0E	S-SCRW, V+1.7-6
B	87-078-100-019	0E	S-SCRW, V+1.7-2.5
C	87-078-132-010	0E	PW, 1.2-3.5-0.25C-CUT
D	87-078-133-010	0E	PW, 2.6-4.15-0.13
E	87-078-086-019	0E	SOMA, 1.5-3.5-0.3 SLT

SPRING APPLICATION POSITION


83-ZM1-230-010
SPR-C, SLIP
83-ZM1-246-010
SPR-T, R L
83-ZM1-265-010
SPR-C, AUTO
83-ZM1-241-010
SPR-C, PLAY
83-ZM1-245-010
SPR-T, DIR
83-ZM1-264-010
SPR-T, LOCK
83-ZM1-247-010
SPR-T, FF REW
83-ZM1-248-010
SPR-T, AUTO


83-ZM1-269-010
SPR-C, BT L
83-ZM1-240-010
SPR-C, BT R
83-ZM1-242-010
SPR-T, PLAY
83-ZM1-253-010
SPR-T, EH
83-ZM1-244-010
SPR-T, PINCH L
83-ZM1-252-010
SPR-T, PINCH R

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, SERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCRW
ヒンジ	HINGE
ヒンジビス	S-SCRW
ビスセレート	SCRW,SERRART